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A SEMICONDUCTOR DEVICE AND A MOUNTING METHOD FOR SEMICONDUCTOR CHIPS

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Abstract

Objective

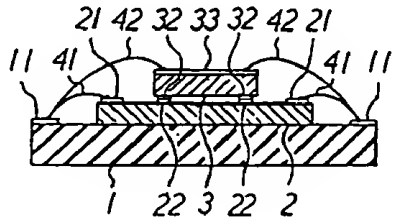
[The present invention] concerns a chip-on-chip method semiconductor device, in which a secondary semiconductor chip is mounted over a primary semiconductor chip, and the objective is to offer a semiconductor device and a mounting method of semiconductor chips, in which the secondary semiconductor chip can be even further highly integrated.

Constitution

A semiconductor device, which has a primary semiconductor chip (2) mounted onto a substrate (1), and a secondary semiconductor chip (3) mounted over the primary semiconductor chip, and conductors (11) over the substrate are connected to electrodes (21) of the primary semiconductor chip by the wire bonding method, and the secondary semiconductor chip is connected to the primary semiconductor chip by the face-down method, and

has a structure in which the conductors (11) over the substrate (1) or the electrodes (21) of the primary semiconductor chip (2) are connected to the back face electrode (33) of the secondary semiconductor chip (3) by the wire bonding method.

A cross-sectional diagram which shows the chip-on-chip method semiconductor device of this invention



Claims

1. A semiconductor device which has a primary semiconductor chip (2) mounted onto a substrate (1), and a secondary semiconductor chip (3) mounted over the primary semiconductor chip (2),

and conductors (11) over said substrate (1) are connected to electrodes (21) of the primary semiconductor chip (2) by the wire bonding method, and the secondary semiconductor chip (3) is connected to the primary semiconductor chip (2) by the face-down method,

characterized by the conductors (11) over said substrate (1) being connected to the back face electrode (33) of the secondary semiconductor chip (3) by wires (42).

2. A semiconductor device which has a primary semiconductor chip (2) mounted onto a substrate (1), and a secondary semiconductor chip (3) mounted over the primary semiconductor chip (2),

and conductors (11) over said substrate (1) are connected to electrodes (21) of the primary semiconductor chip (2) by the wire bonding method, and the secondary semiconductor chip (3) is connected to the primary semiconductor chip (2) by the face-down method,

characterized by the electrodes (21) of the primary semiconductor chip (2), which are connected to the conductors (11) over said substrate (1) by the wire bonding method, being connected to the back face electrode (33) of the secondary semiconductor chip (3) by wires (43).

3. A semiconductor device which has a primary semiconductor chip (2) mounted onto a substrate (1), and a secondary semiconductor chip (3) mounted over the primary semiconductor chip (2),

and conductors (11) over said substrate (1) are connected to electrodes (21) of the primary semiconductor chip (2) by the wire bonding method, and the secondary semiconductor chip (3) is connected to the primary semiconductor chip (2) by the face-down method,

characterized by the conductors (11) over said substrate (1) or the electrodes (21) of the primary semiconductor chip (2) being connected to the back face electrode (33) of the secondary semiconductor chip (3) by the wire bonding method.

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